

ABSTRACT

Methods and apparatus for efficiently enabling garbage collectors to be swapped into and out of virtual machine environments are disclosed. According to one aspect of the present invention, an interface for reclaiming memory in a multi-threaded virtual machine environment that has a virtual machine includes a first module that is associated with the virtual machine and a second module that is separate from the first module but interfaces with the first module. The first module includes a first routine for initiating a garbage collection process within the virtual machine environment, a second routine for scanning roots associated with the virtual machine environment, and a third routine for following roots through objects associated with the virtual machine environment. The second module includes a fourth routine for initializing a heap in the virtual machine environment, a fifth routine for allocating an object in the virtual machine environment, and a sixth routine for performing the garbage collection process. In one embodiment, the second module also includes a seventh routine for implementing read and write barriers for the garbage collection process.